

Comparison of Airport Operations Before, During and After the COVID-19 period in Slovakia

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Abstract – The COVID-19 pandemic has had a profound impact on global travel, resulting in significant disruptions to airport operations worldwide. The study on airport operations in Slovakia before, during, and after the COVID-19 pandemic found that passenger traffic and flight frequencies experienced significant declines during the pandemic, causing operational disruptions and financial challenges for airports. The research utilizes a mixed-methods approach, combining quantitative data analysis and qualitative insights from key stakeholders involved in airport management and operations. In the post-pandemic period, while there was some recovery, passenger numbers and flight frequencies remained below pre-pandemic levels. The study's results suggest that the aviation industry in Slovakia faces ongoing challenges in adapting to the new normal, with implications for future investments and strategies in airport management, capacity planning, and financial sustainability.

Keywords – Covid pandemic, airport management, Slovak aviation.

Before the pandemic, Slovak airports were busy as people travelled for leisure and services.

However, during the pandemic, international travel was severely curtailed and many flights were cancelled, causing a significant drop in passenger numbers and airport revenues. In addition, airports introduced new health and safety measures to protect passengers and staff from the spread of the virus. Now that the pandemic situation is improving, airports are gradually returning to normal operations, but continue to take measures to ensure the safety of passengers and staff [1].

In the period before the pandemic, airports in Slovakia were operating at full capacity. Many international flights were operating daily, connecting the country with destinations around the world. The airports were also a hub for domestic flights connecting cities and regions of Slovakia. Passenger numbers were high and the airports generated significant revenue from a variety of sources such as car parks, duty-free shops and food and beverage outlets. In addition, airports also provided various services such as baggage handling, customs and immigration services and security checks.

During the pandemic, however, the situation changed dramatically. Governments around the world imposed restrictions on international travel to limit the spread of the virus. As a result, many flights were cancelled and the number of travellers was significantly reduced. Slovakia's airports were no exception, with passenger numbers down by more than 80% compared with the pre-pandemic period. As a result of the reduced number of passengers, airport revenues have also decreased significantly. Airports have been forced to introduce cost-cutting measures such as redundancies and reduced staff working hours [2].

In addition to reducing passenger numbers, airports were required to introduce new health and safety measures to protect passengers and staff from the spread of the virus.

1. Introduction

The operation of airports in Slovakia was significantly affected by the COVID-19 pandemic.

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These measures included temperature controls, mandatory face masks, increased cleaning and disinfection, and guidelines for social distancing. Airports also had to reduce the number of passengers allowed in the terminal at any given time to ensure compliance with social distance guidelines. This has led to increased passenger waiting times and deterioration in the overall passenger experience [3].

Now that the pandemic situation is improving, airports in Slovakia are gradually returning to normal operations. Restrictions on international travel have been lifted and passenger numbers are slowly increasing. However, airports continue to implement health and safety measures to protect passengers and staff from the spread of the virus. In addition, airport revenues are still significantly lower than before the pandemic and airports continue to implement cost-cutting measures to stay afloat [4].

In conclusion, the COVID-19 pandemic has significantly affected the operation of airports in Slovakia. Restrictions on international travel and the introduction of health and safety measures have significantly reduced passenger numbers and airport revenues. However, as the pandemic situation improves, airports are gradually returning to normal operations, but with continued measures to ensure the safety of passengers and staff. The pandemic has also led to changes in the way airports operate, with a greater emphasis on health and safety measures and a reduction in revenue generating activities.

This study aims to compare airport operations in Slovakia before, during, and after the COVID-19 periods, providing insights into the changes, adaptations, and challenges faced by airports in the country. By examining the pre-pandemic era, the height of the pandemic, and the subsequent recovery phase, this analysis will shed light on the resilience and transformation of the aviation sector in Slovakia.

Prior to the pandemic, Slovakia's airports played a vital role in facilitating both domestic and international travel, connecting the country to various destinations across Europe and beyond. Passenger traffic was steadily increasing, reflecting a thriving tourism industry and growing business activities. Airports operated at near-full capacity, and airlines offered extensive flight schedules to cater to the demands of travelers.

However, with the emergence of COVID-19, travel restrictions, border closures, and public health concerns quickly reshaped the landscape of airport operations. The number of flights dramatically decreased, and passenger volumes plummeted as lockdowns and travel bans were implemented to curb the spread of the virus. Slovakia's airports faced a multitude of challenges, including financial hardships, operational adjustments, and the need to prioritize health and safety measures to instill confidence in travelers.

As the pandemic progressed and vaccinations became more widespread, the aviation industry gradually entered a recovery phase. The easing of travel restrictions and the implementation of health protocols allowed airports to resume operations, albeit with new guidelines and considerations. This period marked a critical phase for airports in terms of implementing innovative technologies, adopting sustainable practices, and rebuilding trust among passengers and industry stakeholders.

The comparison of airport operations before, during, and after the COVID-19 periods in Slovakia is crucial for understanding the profound impact of the pandemic on the aviation sector. By analyzing the challenges faced, adaptations made, and recovery efforts undertaken, this study aims to contribute to the knowledge base of airport management, inform policy decisions, and support the sustainable revival and growth of Slovakia's airports in a post-pandemic era [5], [1].

The findings of the study reveal the substantial impact of COVID-19 on airport operations in Slovakia. During the pandemic, airports experienced a significant decline in passenger traffic and flight frequencies, leading to financial strain and operational adjustments. Strict health and safety protocols were implemented to ensure the well-being of passengers and staff, including enhanced cleaning procedures, social distancing measures, and mandatory use of personal protective equipment.

Furthermore, the study highlights the resilience and adaptation demonstrated by airports in the post-pandemic period. With the easing of travel restrictions and the gradual recovery of the aviation industry, airports have implemented strategies to restore passenger confidence and revive air travel. These strategies encompass innovative technologies, improved customer service, and collaborative efforts among stakeholders to foster a safe and efficient travel experience [6], [7].

The comprehensive analysis presented in this study contributes to the understanding of the challenges faced by airports in Slovakia during the COVID-19 pandemic. The findings provide valuable insights for airport authorities, policymakers, and industry stakeholders to develop effective strategies for future crises and to facilitate the recovery and growth of the aviation sector.

2. Methodology

In our work, we focus on comparing the characteristics of three different periods in which the aviation industry has been over the last five years. It is worth doing so mainly because of the great difference between these periods, their conditions, and opportunities.

The methodology for comparing airport operations in Slovakia before, during and after the COVID-19 period would include several steps.

The first step would be to collect data on airport operations in Slovakia before, during and after the COVID-19 pandemic. These data could include data on the number of passengers, airport revenues, number of flights operated and number of staff working at airports. These data could be obtained from government sources, airport operators, and industry associations.

The next step would be to analyse the data collected to identify trends and patterns in airport operations. This includes a comparison of passenger traffic and revenue generated by airports before, during and after the pandemic. It also includes a comparison of the number of flights made and the number of staff working at airports before, during and after the pandemic.

Qualitative data can be obtained through interviews with airport operators, government officials and industry experts to complement quantitative data. Surveys can also be conducted to gather information from passengers and staff about their experiences at the airport during the pandemic.

Case studies of specific airports can be conducted to gain a deeper understanding of the impact of the pandemic on airport operations in Slovakia. This could be a detailed analysis of the operations, problems and measures put in place at a particular airport during a pandemic.

It is important to note that the methodology used in this research would need to be adjusted based on data and resource availability as well as ethical considerations when conducting research during a pandemic.

3. Changes in Global Air Traffic due to the Covid-19 Pandemic

The period prior to the onset of the SARS-CoV-2 pandemic, marked by European countries progressively implementing and then removing flight restrictions in anticipation of the pandemic in March 2020, was a time of significant growth for all airports. During this phase, there was a remarkable upswing in key indicators such as passenger numbers, flight frequencies, and overall profit gains [8]. As can be seen from Figure 1, by 2020, airport capacity indicators were growing year by year and reached their historical peak in 2018-2019.

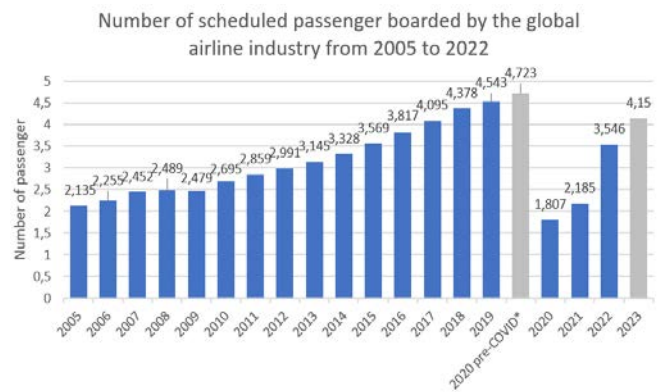


Figure 1. Number of scheduled passenger boarded by the global airline industry from 2005 to 2023

*Values for 2020 pre-COVID are estimates, assuming there is no COVID-19 pandemic

** Values for 2023 are estimates based on data already received from previous months of 2022

(Source: own elaboration, data from www.statista.com [9])

The first two months of 2020 showed good airport capacity results also compared to 2019. At that time, it was expected that 2020 would see a continuation of the growth of previous years and that the number of flights and passengers carried would reach a new high.

However, in late February and early March, the impact of the pandemic on society was increasing and one by one country began to introduce various restrictions, including flights. Here begins the second period of our comparison, the period of active impact of the pandemic on the airline industry.

Air travel was seen as one of the fastest ways of spreading the virus, as many passengers, unaware of their infection with the virus, travelled to different parts of the world and contributed to the spread of the virus. Therefore, various restrictions were introduced, such as the wearing of respirators, and later compulsory testing before or after the flight [10]. Many countries gradually began to close their borders to limit the spread of the pandemic. The cancellation of flights or the overflight of empty planes between airports caused a significant reduction in the number of passengers, as well as a reduction in airline revenues, and forced many airlines to lay off staff or declare bankruptcy. The year 2020 ended with the lowest number of passengers in 20 years.

In 2021, the situation did not improved much, but airports and airlines were able to operate their flights more stably and adapt better to the new conditions. For passengers, departure and arrival conditions from different countries have become a new problem. Following the introduction of universal vaccination, the Covid passport system, which confirmed the presence of a person's vaccination, began to be introduced in most countries.

The year 2021 showed improved results compared to 2020, but its performance was still below 50% of the performance of 2019 [11].

From the beginning of 2022, the situation began to stabilize and in the spring some countries began to lift some restrictions on entry into their territory, and a period of mass lifting of restrictions began in late May and early June. The period from the beginning of 2022 can therefore be considered as the post-Covid period.

The post-Covid period is also characterised by the fact that the aviation industry has suffered new restrictions due to the start of the military conflict between Ukraine and Russia. Since 24 February a ban on flights over Ukrainian territory was imposed in order to secure aircraft and passengers from incidents.

The aim of our article is to compare these periods (Figure 2) in terms of the conditions and peculiarities of air transport in Slovakia.

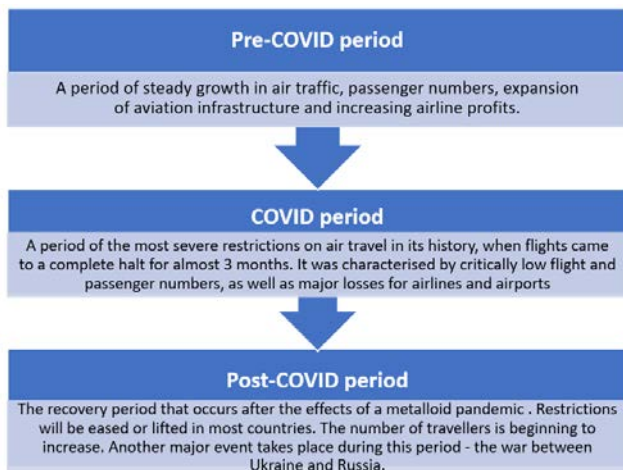


Figure 2. Sequence of comparable periods in the aviation segment (Source: own elaboration)

In this paper, data from three airports in Slovakia will be analysed in three different periods: before, during and after the Covid pandemic. The main reasons for the different results in airport performance were described and the airports were analysed and compared with each other. This comparison is necessary to understand how the Slovak aviation industry adapts to changing market conditions and what influences it.

4. Description of the Airports in Slovakia

There is a large amount of infrastructure for aircraft operations in Slovakia. In total, there are more than 30 aviation infrastructure units, including 15 public, 12 non-public and 3 military airports (15 public, 12 nonpublic and 3 Military.) [12]

Of this number, 8 airports are international and are divided into 2 groups according to the status of customs and passport services.

The international airports with permanent customs and passport services are [13]:

- M. R. Štefánik Bratislava Airport (BTS)
- Košice International Airport (KSC)
- Poprad–Tatry Airport (TAT)

International airports with customs and passport services provided on prior request are:

- Piešťany Airport (PZY)
- Žilina Airport (ILZ)
- Nitra Airport
- Prievidza Airport
- Jasna Airport

In addition to these main airports, there are also 19 smaller domestic airports in Slovakia (National aerodrome), and 64 airfields for aerial work.

Most flights (98%) were made from the three main international airports in Slovakia (Figure 3), namely Bratislava International Airport, Košice International Airport and Poprad-Tatry International Airport. Piešťany, Sliac and Žilina airports account for less than 2% of passenger traffic. Therefore, in our study we will only use data from the three largest airports in Slovakia.

Modal split of passenger transport at airports in Slovakia in 2018

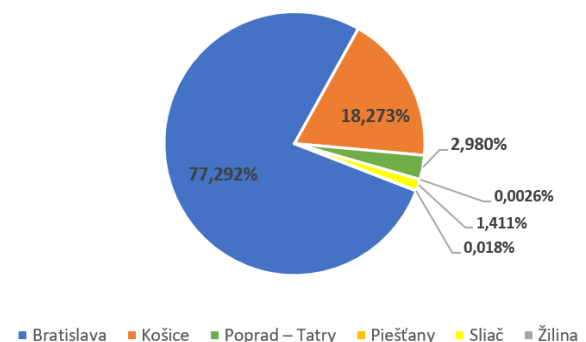


Figure 3. Modal split of passenger transport at airports in Slovakia in 2018.

(Source: own elaboration, data from mindop.sk [14])

In Table 1, we have compared the different data for these airports. As can be seen from the table, Bratislava airport has the highest load. The table also shows a comparison of the number of passengers carried, flights operated, etc.

Table 1. The main characteristics of the 3 largest airports in Slovakia [14]

Airport	M. R. Štefánik Bratislava Airport	Košice International Airport	Poprad-Tatry Airport
Airport type	Public	Public	Public
Elevation AMSL	436 ft / 133 m	755 ft / 230 m	2,356 ft / 718 m
Opened (year)	1951	1955	1938
Average number of passengers for 2010-2019	1 724 162	380 661	57 330
Average number of total Aircraft movements for 2010-2019	25 715	10 156	7 052
Regular flights	Ryanair, Wizz Air, Air Cairo, Smartwings	Austrian Airlines, Ryanair, LOT Polish Airlines, Wizz Air, Eurowings	Wizz Air
Irregular flights	AirExplore, ABS Jets, Air - Transport Europe, EHC service, Elite Jet, Go2Sky, JetAge	Smartwings, Freebird, AirExplore, Aegean Airlines, Cyprus Airways.	AirBaltic, SkyUp

5. Analysis of Airport Performance in the Pre-Covid Period

The period prior to the start of the COVID-19 pandemic is characteristic of all airports as a period of very rapid growth and increase in all parameters such as number of passengers, number of flights and overall increase in profits. The year 2018-2019 was one of the best years ever for all 3 airports, as well as for most airports and airlines in Europe.

Many factors have contributed to this. The development of tourism in Slovakia in particular and Europe in general, the improvement in passport control conditions to the European Union for other countries, and the overall growth of the European Union economy, which has increased the number of potential travellers who can afford air travel. The European Union's aviation industry development strategies and the efforts of the airlines themselves have also contributed, leading to increased investment in airport infrastructure and increased global capacity [15].

The development of the aviation market has led to an increase in the number of low-cost carriers, whose market share has almost doubled in the last 15 years [16].

The introduction of precise safety standards and the improvement of the safety of flights have also played a role. This has led to greater public confidence in air transport.

Airport capacity data were taken mainly from Slovak national reports, published data from airports and from available annual reports of the analyzed airports for the last 10 years.

Bratislava Airport

The year 2019 was one of the strongest years in history for Bratislava Airport Company in terms of operations. For only the fourth time since the launch of the airport's operations on the territory of Bratislava in 1951, it managed to once again surpass the round two-million passenger milestone, and 2019 was the second highest number of passengers handled in the history of the airport company with 2,290,242 passengers. In doing so, it also set an all-time record for the number of passengers handled on scheduled flights - more than 1.88 million.

This was mainly due to the busiest routes, which in 2019 included, in addition to flights to London, scheduled flights to Antalya, Turkey, with Smartwings, as well as daily flights to and from Moscow with the air carrier Pobeda, flights to all Ukrainian destinations (Kiev-Zhulyany, Kiev-Boryspil, Lviv, Odessa). Compared to its strongest year ever, 2018, the airport company recorded only 2,470 fewer passengers handled due to the grounding of Boeing 737 max aircraft and the discontinuation of routes to Prague and Košice [17].

Košice International Airport

Over the last 7 years until the beginning of the global pandemic, Košice Airport has seen a significant increase in passenger traffic. The numbers grew thanks to the acquisition of new air carriers and new routes. The year 2018 was a breakthrough not only in terms of the number of passengers carried, which surpassed the figure of 500,000, but also with the acquisition of two new air carriers - Eurowings (routes to Germany) and Ryanair. However, in 2019, the number of passengers at Košice Airport has stabilized at the highest level since 2008, and it was 558,064 passengers [18].

Companies operating in the Košice region are: Eurowings GmbH, Wizz Air, České aerolinie a.s., Polskie Linie Lotnicze LOT S.A., Austrian Airlines AG, El Al, Aegean Airlines SA, AlMasria Universal Airlines, Astra Airlines, Bulgaria Air, Bulgarian Air Charter, Corendon Airlines, Cyprus Airways, Fly Egypt, Freebird Airlines.

Poprad–Tatry Airport

In 2019, Poprad Tatry Airport recorded the highest number of flights and passengers transported in the last 20 years. The total number of passengers was 94 249. The main reasons for the increase in the number of passengers were the increase in the number of non-scheduled flights, mainly to Antalya, Turkey. Compared to 2018, the number of non-scheduled flights to Turkey increased more than threefold, i.e. from 18 flights to 58, and the number of passengers carried increased from 5 752 to 18 288.

Contributing to the stable situation in the scheduled air transport segment in 2019 were:

- cooperation with the air carrier Wizz Air on scheduled air services to London (Airbus A320 and Airbus A321),
- increased frequency of flights to Kiev (on Boeing 737-800 aircraft),
- deployment of a larger and more modern Airbus A220 aircraft of the air carrier airBaltic on the scheduled air service to Riga [19].

6. Analysis of Airport Performance During the Active Phase of the COVID-19 Period

At the turn of February and March, the first signs of change began to appear. Due to the pandemic, the body temperature of passengers began to be taken, followed by a ban on arrivals from Italy and, from 13 March, a complete ban on civilian arrivals for three months. The resumption of flights after a three-month break was also weaker - only arrivals from safe countries were allowed, with Wizz Air resuming only one route to Sofia in June, while Ryanair only started flying in July, to only 8 destinations compared to 26 last year.

Flights from third countries were also banned, so there were no non-scheduled commercial air services or scheduled commercial air services to Turkey, Tunisia, Egypt, and United Arab Emirates. There was a ban on foreigners entering Russia and a ban on third-country nationals entering Slovakia for tourism purposes, which prevented the Pobeda air carrier from operating flights to Moscow and the Wizz Air air carrier from launching its planned flights to St Petersburg, and also restricted the operation of other flights from third countries - from Dubai, Skopje, Ukraine, and other destinations.

Travel interest has been affected by mandatory domestic isolation on arrival at destinations, or mandatory Covid-19 testing before flights to destinations, and finally by the arrival of the second wave of the pandemic at the end of the year. All of this had a significant impact on Slovak airports, on aviation and non-aviation revenues, and undoubtedly on overall economic performance.

Bratislava Airport

In 2020, 405 thousand passengers were handled on arrivals and departures, compared to almost 2.3 million in 2019 and 2018. The airport company's revenue fell by around 70% compared to the original plan for 2020.

In the first half of 2021, the airport company recorded the number of handled passengers only in the range of two to about eight thousand passengers per month. The summer air season got off to a better start in June, when several air carriers resumed their routes. In the first half of 2021, the number of passengers handled was only five per cent of the number in 2019; in the second half of 2021, the number increased to 32 per cent of 2019, which was a record year for M.R. Štefánik Airport in terms of the number of passengers handled (almost 2.3 million passengers). Overall, the year closed with 17,831 flights and 480 thousand passengers, which represented 21 per cent of 2019's numbers and an increase of 19 per cent compared to 2020. For the second consecutive year, the number of passengers handled remained below the half-million mark and remained at the pre-2003 level. The end of the year was marked by another wave of pandemics and restrictions on entry for travelers to countries around the world, which reduced interest in air travel [20], [21].

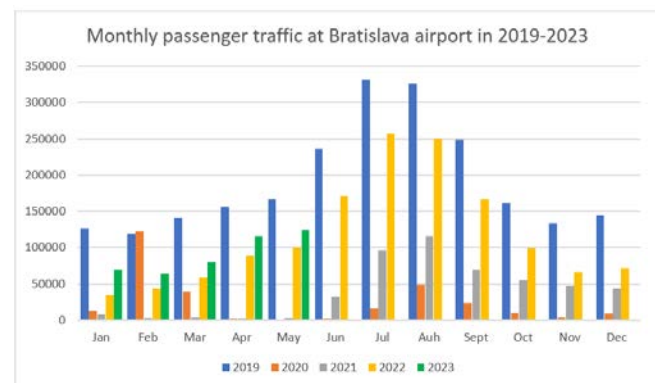


Figure 4. Monthly passenger traffic at Bratislava airport in 2019-2023.

(Source: own elaboration, data from [17], [20], [21])

As can be seen from Figure 4, the beginning of 2020 has started with good results at Bratislava Airport. January and February 2020 showed better results in the number of passengers carried compared to one of Bratislava Airport's best years. Later, there was also a complete ban on civil arrivals for three months from 13 March and the exact measures remained until the end of the year and then continued in 2021. The situation improved only at the end of June and the beginning of July 2021, but the airport's performance still did not exceed even 30% of 2019.

Košice International Airport

The full impact of the pandemic situation was also felt at Košice Airport. As of 13 March 2020, as a result of measures taken to prevent the spread of the COVID-19 coronavirus, flights with a landing point in the territory of the Slovak Republic have been banned. Operations were only resumed in June with the return of Czech Airlines to its traditional route to Prague. Austrian Airlines, Wizz Air, and Ryanair have also gradually joined in with the resumption of flights.

During 2020, a total of 97,382 passengers passed through the gates of Košice Airport, a decrease of 82.5% or 460,681 passengers compared to 2019. 93 603 passengers were transported on scheduled routes. Charter flights were used by 2 712 passengers and general aviation flights by 1 067 passengers. London Luton was the most popular destination in 2020, followed by Vienna, Prague, Warsaw and London Stansted. The only charter destination on offer was Larnaca, Cyprus [22].

Poprad-Tatry Airport

Until 13.03.2020, when a ban on the operation of designated civil flights with a point of take-off on the territory of another state and a point of landing on the territory of the Slovak Republic was declared, air transport operated without restrictions and the number of passengers and movements developed in a positive trend, which continued in 2019. The number of passengers checked-in in this period reached the value of 14 685.

The declaration of a ban on the operation of designated civil flights with a point of take-off in another country and a point of landing in the Slovak Republic, which resulted in the suspension of all foreign flights. On the basis of information from air carriers operating non-scheduled air services during the summer season, the summer holiday season was completely cancelled.

In August-September, when the epidemiological situation slightly improved, the air carrier Wizzair resumed scheduled air services to London. However, as a result of the deteriorating situation in Slovakia but especially in the UK, the London - Poprad - London service was again cancelled in the autumn until the end of the year.

Despite this, the airport managed to operate 79 flights in 2020 with 24,189 passengers.

The operational performance of Poprad-Tatry Airport in 2021 was significantly affected by the COVID-19 pandemic, which determined the scenario and development of air traffic. The winter timetable in 2021 envisaged three scheduled flights to London, Riga, and Kiev.

However, of these plans, only a very limited number of flights to London were implemented, and in addition to the three flights at the beginning of the year, the route to London was also operated with numerous cancellations during the summer and autumn of 2021. Nevertheless, Wizzair managed to operate 40 flights from Poprad-Tatry airport in 2021 with 7 920 passengers. The load factor itself was very low - below 50% of capacity. The routes to Kiev and Riga were cancelled by the air carriers themselves for the reasons mentioned above [23], [24].

In the segment of non-scheduled air transport, Poprad - Tatry Airport, operated 9 flights to Burgas, although the occupancy of these flights was also minimal.

The total number of passengers in 2021 reached 16 277 passengers, which is 33% less than in 2020.

7. Analysis of Airport Performance in Post-COVID-19 Period)

In early 2022, the situation with the pandemic began to stabilize, and in the spring, countries began to lift restrictions on entry into their territories, and in late May and early June, a period of massive lifting of restrictions began. Thus, the period since spring 2022 can be considered the post-Covid period. Although the WHO officially declared that the pandemic was no longer a public health emergency of international concern only on May 5, 2023. But according to data, airlines began to resume their pre-COVID operations earlier.

Bratislava Airport

For the whole of 2022, Stefanik Airport handled approximately 1,400,000 passengers for arrivals and departures. Thus, the passenger traffic recovery rate from 2019 in 2022 reached 61%. From the beginning of January to the end of October, 21,666 takeoffs were made at the airport. In 2023, Bratislava Airport statistics are expected to reach 1,600,000 - 1,800,000 passengers, mainly due to an increase in the number of charter holiday flights to exotic destinations such as Oman, Zanzibar and the Cape Verde Islands.

This increase in passenger numbers compared to 2020 and 2021 is primarily due to the reduced impact of the pandemic and the cancellation of related measures. At the same time, the impact of the pandemic still created barriers throughout 2022 for some travelers, and this depends on how individual states set the conditions for entry into their territory. As of early 2023, most states have lifted or eased most COVID-19-related restrictions [25].

Košice International Airport

During the summer season of 2022, Košice Airport handled 161,655 vacationers, a significant increase. The season started on Sunday, June 5, 2022 with a flight to Antalya, Turkey, and ended on September 29 with a flight to Larnaca, Cyprus. For comparison, in the pre-pandemic year of 2019, Košice Airport handled 184,742 passengers on charter flights, the highest number in its history. All charter flights from Košice to the coast in the period up to the end of September were as busy as before the pandemic, which confirms the strong demand for travel throughout the entire Košice Airport service area. Travel agencies offered flights from Košice to 10 destinations in 7 countries during the summer season [26].

In the year 2022, the passenger traffic at Košice Airport recorded a notable surge, with a total of 542,864 passengers passing through its gates. This marked an impressive increase of 222% or 374,122 passengers compared to the previous year. Remarkably, Košice Airport stands out among the airports in the European Union, as it closely approached the pre-COVID-19 level of travel witnessed in 2019, with only a marginal 2.7% decrease in the number of passengers.

The distribution of passengers among flight types was as follows: scheduled flights catered to 373,927 passengers, charter flights were utilized by 165,280 holidaymakers, and general aviation flights served 3,657 passengers.

Analyzing the destinations, Vienna emerged as the most popular scheduled destination in 2022. The second busiest route was Košice-London Luton, closely followed by London Stansted. Notably, Košice Airport experienced a significant milestone with the resumption of flights to Warsaw operated by LOT Polish Airlines after a hiatus of nearly two years. Starting from March 10, 2022, passengers were once again able to access numerous destinations with connections through Warsaw.

During the summer season, travel agencies provided departures from Košice Airport to 10 destinations in 7 countries. A significant highlight was the busy charter flight operations from Košice to holiday destinations, which spanned from June to the end of September. These charter flights displayed a remarkable rebound, operating at pre-pandemic levels and indicating a strong appetite for travel across the entire catchment area of Košice Airport.

Among the summer destinations, Antalya, Turkey proved to be the most popular with 65,753 passengers, followed by Larnaca, Cyprus, accommodating 20,938 passengers, and Rhodes, Greece, with 14,825 holidaymakers [27].

Poprad-Tatry Airport

In 2022, Poprad-Tatry Airport never renewed the Poprad-Riga and Poprad-Kyiv connections. Important connections for this airport were not restored after the COVID-19 shutdown and the connection to Kiev was not restored due to the start of military operations on the territory of Ukraine.

However, the increase in the number of private and charter flights from Poprad-Tatry airport is a positive development. This is mainly due to the lifting of restrictions, but also due to the management's development strategy and greater emphasis on charter flights.

In 2022, the airline operated 10,328 flights and carried 56,745 passengers. There were also many cargo flights.

8. Comparison of Airport performance in Different Periods

Figure 5 shows the development of the number of passengers from or to Slovak airports between 2015 and 2022. As can be seen from the figure, Košice Airport was able to adapt to COVID-19 constraints in the best possible way and to react quickly to their removal. Thanks to the quick response to the lifting of restrictions and the resumption of operations by most airlines, Košice Airport reached more than 90% of its 2019 level in 2022.

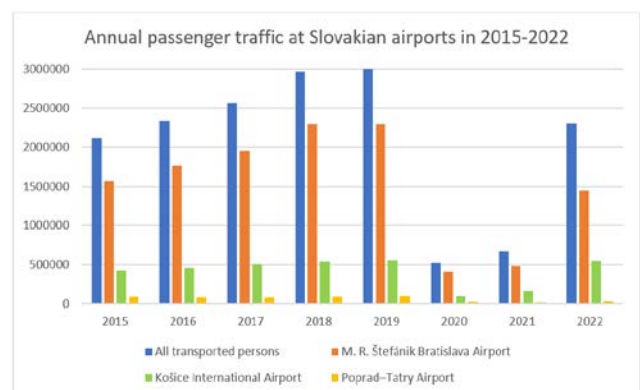


Figure 5. Annual passenger traffic at Slovakian airports (Source: own elaboration, data from [25], [26], [27], [28]).

Bratislava Airport has managed to restore approximately 65% of its capacity compared to the pre-crisis period. Many important flights that were cancelled in the past have not been restored for various reasons mentioned above. Poprad-Tatry airport, which is the smallest and particularly vulnerable to cancellations, performed the worst, even in 2022.

9. Discussions

The period after the pandemic is also characterised by the fact that the aviation industry suffered new constraints due to the start of the military conflict between Ukraine and Russia. Since 24 February, a ban on flights over Ukrainian territory has been imposed in order to protect aircraft and passengers from incidents.

Ukraine accounts for 3.3% of total air passenger traffic in Europe and 0.8% of total global traffic. Russian air passenger traffic accounts for 5.7% of European traffic in 2021 and 4.5% of global air traffic [29].

As regards air access, all Member States of the European Union have banned Russian aircraft, and therefore Russian airlines, from entering their airspace. In response, Russia has closed its airspace to European Union countries. European airlines are therefore not allowed to fly over Russia, and this has a particularly significant impact on flights to Asian countries such as China and Japan.

Geographically, Russia has always been an important country for global aviation, as its airspace provides important Asian-European corridors. This has been a great advantage for airlines, as it has saved money and fuel. The consequences of this conflict led to immediate concerns about longer journeys, increased fuel costs and its impact on freight transport, as the global supply chain was severely disrupted [30].

The energy crisis in Europe and the rise in inflation have also played an important role. This has had an impact on the level of unexpected costs at airports, increased aircraft maintenance and infrastructure costs, which in turn has had an impact on flight prices. Inflation and the energy crisis have thus also affected Slovak citizens, which has contributed to a reduction in their ability to pay.

For example, Bratislava airport lost many passengers due to the cancellation of flights to Ukraine and Russia. The destinations Bratislava-Kiev-Zhulyany, Bratislava-Kiev-Boryspil, Bratislava-Lviv, Bratislava-Odessa and Bratislava-Moscow, which were cancelled during the pandemic, have not been reinstated.

The situation is the same at Poprad-Tatry airport, where of the three originally proposed routes, only services to London are operating, while those to Riga and Kiev have not been restored.

On the other hand, the number of migrants from Ukraine has increased, many of whom were only in transit and often used the airport as a means of transport to other European cities. It can be assumed that this factor was able to slightly increase the number of passengers from Bratislava and Košice airports, as they had many routes to European

countries. This is confirmed by the fact that the most popular destination in Košice was a flight to Vienna.

10. Conclusion

The Air Force has been hit many times in the last two decades. Several historical events have shown the vulnerability of the global aviation sector to various disasters. After each event, the industry has needed considerable time to recover. For example, after the global financial crisis in 2008, the industry took more than seven years to recover. Even with a full recovery in demand, it takes years for airlines to pay off accumulated debt and significant accrued interest, limiting the ability of carriers to reinvest in their employees and products.

In the current world situation, it is difficult to predict how long it will take for the airline industry to recover, as cases of this magnitude have never occurred in the history of aviation.

However, the data show that airlines and airports are slowly returning to their previous activities. In Slovakia, for example, Košice Airport reached more than 90% of its capacity in 2019. Other airports are also pursuing this scenario, but need more time to do so.

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